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Carpenter ant worker.

U. S. Department of Agriculture
Forest Service — Alaska Region
November 1982

Printed by Cooperative Extension Service
University of Alaska Fairbanks and
U.S. Department of Agriculture Cooperating

100C-0-061 Revised June 1989

CARPENTER ANTS: INSECT PESTS OF WOOD PRODUCTS

by Edward H. Holsten

To date, there have been few problems with insect pests of wood products in Alaska, unlike the "lower 48," where insects cause tremendous losses. However, large black ants of the genus *Camponotus* (carpenter ants) have caused damage to wooden homes in Alaska. Carpenter ants are generally of minor economic importance as destroyers of wood in houses. However, if an infestation is of long standing, there may be enough damage to require extensive repairs. Usually, only minor repairs, at most, are needed. Besides being destructive, carpenter ants in houses are a nuisance; they crawl over things and get into food.

These ants build their nests in several types of wood. They attack moist heartwood of living trees, or they hollow out logs, house timbers, or other soft wood materials that are wet or moist. Occasionally, they will tunnel into styrofoam insulation. Carpenter ants tunnel into wood for shelter and to raise their young. Unlike termites, carpenter ants do not eat the wood. They forage from their shelters and consume both animal and vegetable matter.

DESCRIPTION: Ants are social insects; various ages, forms and specialized duties occur simultaneously in a colony. Carpenter ants are among the largest species of ants in the United States. They have elbowed antennae, large heads and constrictions between the thorax and head and between the thorax and abdomen. Winged females may be up to 18 mm long; males are considerably smaller, 11 mm long. Wings are clear with prominent veins. Normally, there is only one functioning wingless queen in a colony, who may live as long as 15 years.

There are several sizes (8 to 11 mm long) of workers, all of which are females but are undeveloped sexually. Ant eggs are elongate, white, and gourd-shaped. Immature carpenter ants (larvae) are gourd-shaped, soft, legless and yellow white. Their size varies according to the ultimate adult form (e.g., male, female, or workers.) Pupae (transition stage from immature to adult) are creamy white in papery, light brown cocoons which are often erroneously referred to as "ant eggs." Carpenter ants do not sting, but their bite is painful, especially if formic acid is injected into the bite.

LIFE HISTORY: A young colony contains only wingless forms. After the colony has grown to considerable size, a number of winged individuals are produced (Figure 1). These are new males and females (swarmers) whose functions are to begin new colonies. They are commonly seen flying in May and June. After this mating flight, females either reestablish an old colony or establish a new nest. Normally, nests are constructed in dead portions of standing trees, stumps or logs. However, they also nest in structural timbers if they find the conditions suitable. During the first year colonies remain small, consisting of queen, 10 to 20 workers and a few young. In succeeding years, colonies expand rapidly and may number more than 2,000 individuals. It is at this stage that swarmers are produced each year.

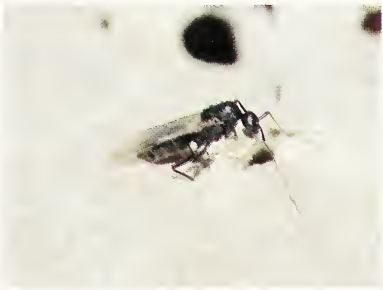

Figure 1. Winged adult carpenter ant.

The developmental period from egg to adult is about two months, depending upon the prevailing temperature. Colony development is slowed by cold winter weather.

SIGNS OF INFESTATION: The most obvious sign of infestation is the presence of ants inside the house. Ants are active all year if they are nesting in heated places; otherwise, they are inactive during cool weather. During the spring and early summer, there may be winged ants (swarmers) inside and around the house.

The presence of carpenter ants can be detected by piles of sawdust-like material (frass) expelled from cracks or slit-like openings made by the ants. This frass is often found in dark closets, attics, under porches, along sills, around the base of infested trees or elsewhere. Unused nest openings are sometimes sealed with wooden plugs. Carpenter ant frass can be distinguished from regular sawdust by the presence of fragments of ants and other insects mixed with wood fibers.

DAMAGE: Damaged wood is discovered when its surface is broken open (Figure 2). The only external evidence of attack is the small, inconspicuous cracks and slit-like openings made in the surface by the ants. The galleries extend both along the grain of the wood and around the annual rings. Gallery surfaces are smooth and clean; frass is completely removed except for occasional deposits in unused galleries.

All kinds of houses, from the newest to the oldest, located in rural areas or cities, become infested. In cities, the ants usually infest houses in wooded areas, but are sometimes found in crowded residential districts as well. Carpenter ants show some preference for moist, rotting wood around the foundations. Once a nest is established, the workers will extend the galleries into sound wood that is adjacent to the partially decayed portion.

Figure 2. Advanced carpenter ant damage.

One or two ants that are flying in and around a house are no cause for concern. However, large numbers of ants that are observed in and around buildings should be promptly investigated.

PRECAUTIONARY MEASURES: Prevention is the best control. Moist wood is attractive to carpenter ants, so measures that prevent structural timbers from becoming wet are very important. Building sites and adjacent areas should be cleared of stumps and partially decomposed logs (Figure 3). If possible, buildings should be placed on concrete or masonry foundations or on treated timbers. This will reduce carpenter ant attack. Lumber and debris in basements and crawl spaces are attractive to ants and may provide nesting sites. Food, both human and animal, should be protected against insects.

Figure 3. Carpenter ant nest in a white spruce stump.

CONTROL MEASURES: The most difficult and most important part of carpenter ant control is locating the nest. Once the nest or nests have been located, control is relatively easy. Simply treating the areas where ants are seen, and not locating and treating the nests, is seldom satisfactory. The most obvious places to look for carpenter ants are in areas that are most likely to have a high moisture content. However, carpenter ants have been found nesting in virtually every part of the house. Edges of floors and ceilings and window and door trims should be carefully examined.

Once the nests are found, they should be treated with residual contact insecticides, such as Diazinon, applied as a dust or spray. Dusts are quite effective in the nests.

Outdoor nests in stumps, trees and other locations may be treated either by a contact insecticide or by drilling a hole and pouring a liberal amount of kerosene or fuel oil into the nest area. THESE ARE FLAMMABLE SUBSTANCES; USE EXTREME CAUTION!!

Additional information on this insect can be obtained from your local USDA Cooperative Extension Service, Alaska State Forestry Office, or from:

Forest Pest Management
State and Private Forestry
USDA Forest Service
201 E. Ninth Ave., Suite 201
Anchorage, Alaska 99501
and
P.O. Box 1628
Juneau, Alaska 99801

Alaska Division of Forestry
762-2117

Institute of Northern Forestry
USDA Forest Service
Fairbanks, Alaska 99701

Alaska Pest Scout Program
Contact your local Cooperative Extension Service office

Carpenter Ants: Insect Pests of Wood Products, by Edward H. Holsten, Entomologist, U.S. Department of Agriculture, Forest Service, Alaska Region, State and Private Forestry, November, 1982.

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163/11/82/WGV/4000